RED SHEET

California Department of Forestry and Fire Protection

Fire Safety Briefing 2004

Lookouts **Communications** **Escape Routes** **Safety Zones**

2004 Fire Safety Briefing
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California Department of Forestry and Fire Protection

Fire Safety Briefing 2004

Foreword

The information contained in this report is a compilation of data taken from a variety of CDF, USFS, DOI, and Local Government sources. It should be noted that the majority of the climatology and fuels information that appears in this document is a product of the fire, weather and predictive services professionals who contributed to the **"California Seasonal Fire Weather/Fire Danger Outlook"**, dated April 1, 2004.

Executive Summary

The objective of this report is to assess and report those projected factors that will influence wildland fire potential throughout California during the 2004 fire season. It is based on previous activity, current developments, present conditions and climatology forecasts over the next several months.

The intent is to assist firefighting agencies throughout California in the training, preparation and development of operational strategies and tactics for the upcoming season. This document will provide credible intelligence consisting of current fuel conditions, climatology factors, safety considerations and recommendations for taking safe aggressive action to mitigate the threats of wildland fire.

Firefighting agencies should be keenly aware of the extremely hazardous fuel conditions in some parts of California that are reaching historical proportions. From the combined effects of a prolonged drought throughout the State, Sudden Oak Death (SOD), varying amounts of tree damage from heavy winds ("blow-down") and snow ("snow-break"), fir engraver beetle infestation to the North and chaparral mortality and Bark Beetle infestation to the South; fire departments and wildland agencies are faced with a situation where firefighter safety is at risk with each incident response.

Note the following:

- Current fuel moistures are nearing record lows
- Current Energy Release Components are at record highs
- Common denominator of recent wildfire activity in the absence of typical fire weather patterns has been the quick ignition and rapid spread of fire; primarily fuel driven.
- Due to prolonged drought, insect infestation, Sudden Oak Death (SOD), wind damage and snow damage expansive pockets of tree and brush mortality exist throughout the State. These conditions have created an accumulation of ladder and ground fuels which are extremely subject to ignition.
- The potential for a plume-dominated fire is extremely high due to the heavy dead fuel loading of the landscape and the potential for crown fire.
- Fire Behavior will be extremely erratic and unpredictable in many instances.

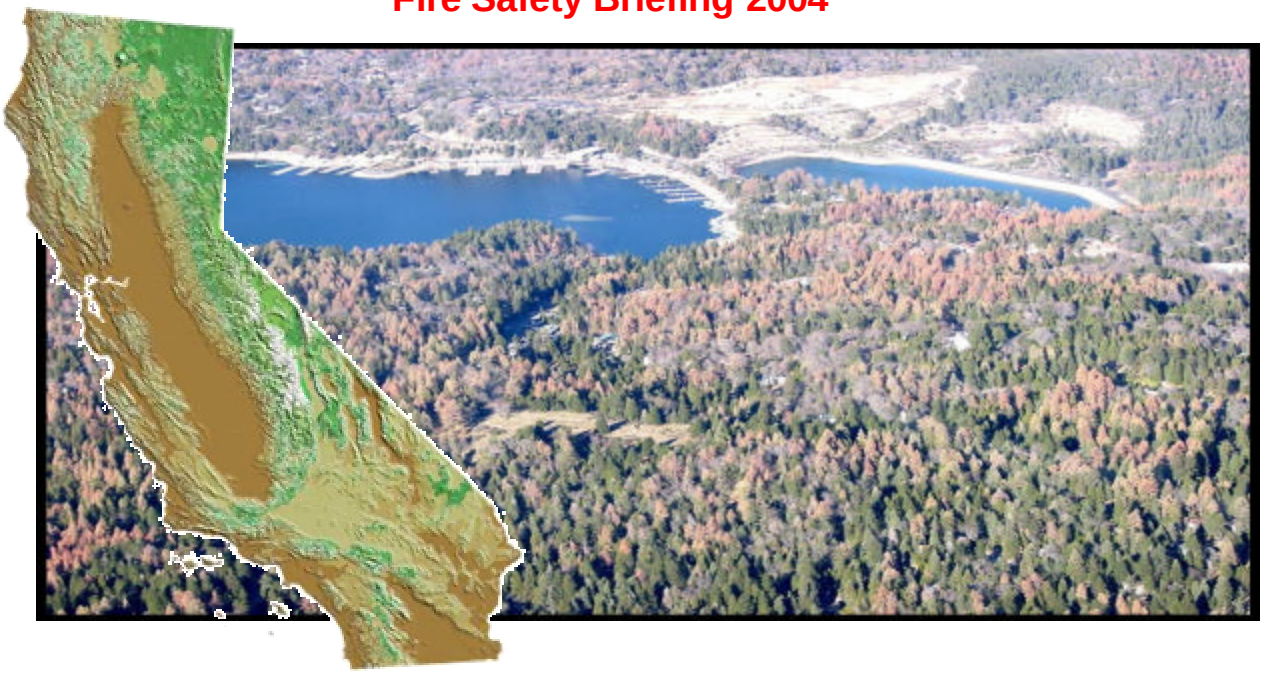
Executive Summary (continued)

It is important to remember that firefighter safety is and will continue to be the first priority. Take time to review and practice the **10 Standard Fire Orders**, **18 Watch-Out Situations**, **Common Denominators of Fire Behavior on Tragedy Fires**, and **LCES**. Unfortunately history has reflected that most wildland fire fatalities have been directly related to violations of these directives.

Take the time to review this document thoroughly. It should provide an excellent source of information for training at the Company level. Ensure and promote a safe working environment at all times and remember the importance of awareness, safety, and responsibility…...it works.

California Department of Forestry and Fire Protection

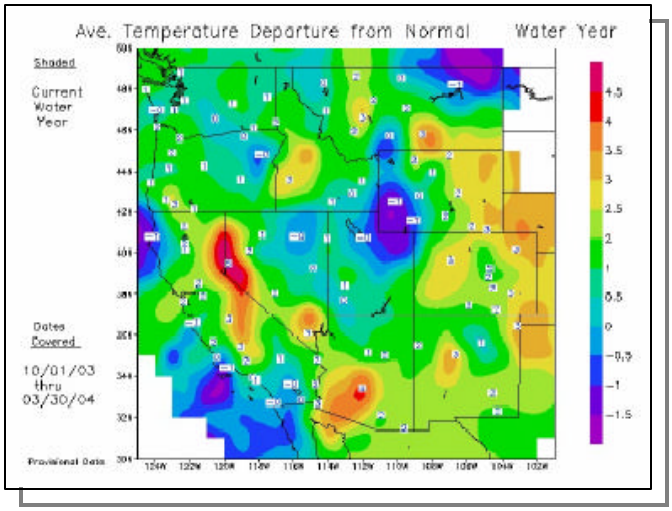
Fire Safety Briefing 2004



Weather and Climate

California Northern Region

The California Northern Region saw both temperature and precipitation patterns in the near-normal category for the 2003-2004 cool season. Regarding temperatures, the spatial distribution for Oct 2003-March 2004 period varied from 1 degree Fahrenheit below normal along the coast to 2-3 degrees Fahrenheit above normal inland. A narrow strip bordering NV was 4-5 degrees Fahrenheit above normal.



Generalizing precipitation patterns, the northern half of the Region had rainfall ranging from near normal to 15% above normal, while the south half fell mainly into a 75-95% range.

The California Northern Region currently has no existing drought on the shorter time scales (under 18 months), but longer duration drought continues in the Great Basin, bordering Northeastern California. There is also no El Nino or La Nina pattern currently in existence, though there are hints that a weak El Nino could develop later in 2004.

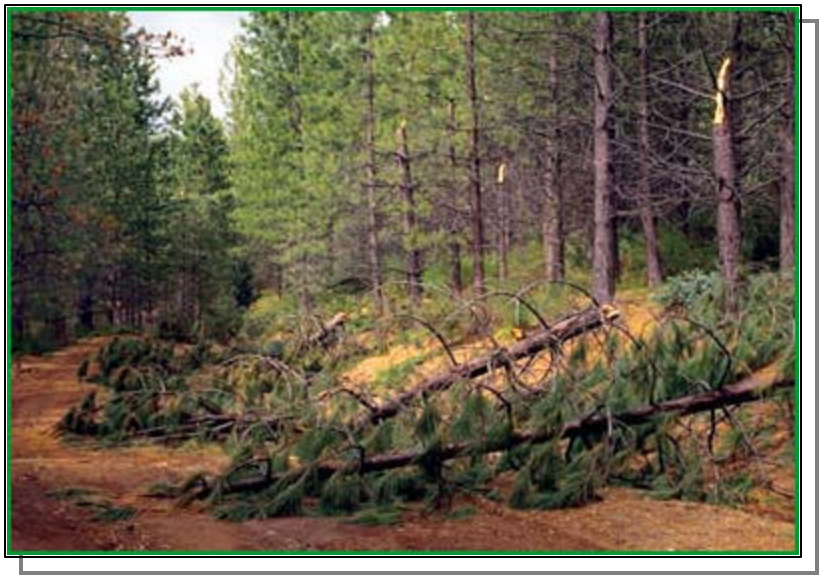
Weather and Climate (continued)

California Northern Region

Temperatures were cool enough during the wettest winter months to help build a good mountain snow-pack by the end of February 2004. At that time, the snow-pack varied from about 95-130% of long-term averages. However, large-scale high pressure aloft locked in over the western U.S. during much of March 2004, producing the warmest March on record in northern California. This melted off most of the lower elevation snow (below about 4500' west and 5500' east) and significantly reduced the higher elevation snow-pack. The reduction was on the order of 30-40% in just one month.
North state humidity patterns were typical during last November, December, and February, which was on the high side, with daily minimums rarely below 40% during these months. However January, which had less than normal precipitation, saw a two-week period of above normal warmth and below normal humidity. The very warm March also had much lower humidity than normal.

The record warmth and accompanying low humidity, along with a 3-4 week rainless period, also combined to open the window for an early and substantial spring burning season.

Regarding winds, there were several strong prefrontal southeast to southwest wind events in November and December, 2003. These produced areas of substantial new "blow-down" (i.e. grounding of trees due to heavy winds) in the mountains. The previous winter had also produced significant "blow-down", so there are probably cumulative effects in some areas. There was one moderate foehn (north to east) wind event in northern California during March. This was a little earlier than in some years, but not a surprise with the strength of the high pressure system in March.



Temperatures for July through September are forecasted to average nearly 4 degrees Fahrenheit above normal overall, with August currently expected to be the month most above normal. The probability of these three months totaling below-normal precipitation approaches 60% this year, consistent with the consensus climate forecast.

Weather and Climate (continued)

California Northern Region

Note: Precipitation for these months is often the lowest 3-month total in a given year; therefore the term 'below normal' implies very little precipitation. We do not foresee a repeat of summer 2003, in which the Southwest U.S. monsoon became displaced exceptionally far west, bringing moisture all the way out to the California coast range around early August. July and August are a time of year when local winds (slope winds and sea-breezes) predominate, with the Pacific jet stream weak and well to the north. By mid or late September, weak to moderate north to northeast winds could return to the north half of the Region. These winds are more critical than in the late spring, due to the much lower large dead fuel moistures, and the stressed live fuels.

California Southern Region

Precipitation during this past year was about 60 to 80 percent of normal across southern and central California. This is the fifth year in a row in which most of the southern half of the state has experienced below normal precipitation. Although recent rains have alleviated drought conditions temporarily over the northern part of the Southern Region, long term drought conditions continue to persist across the eastern and southeastern portions of the state.

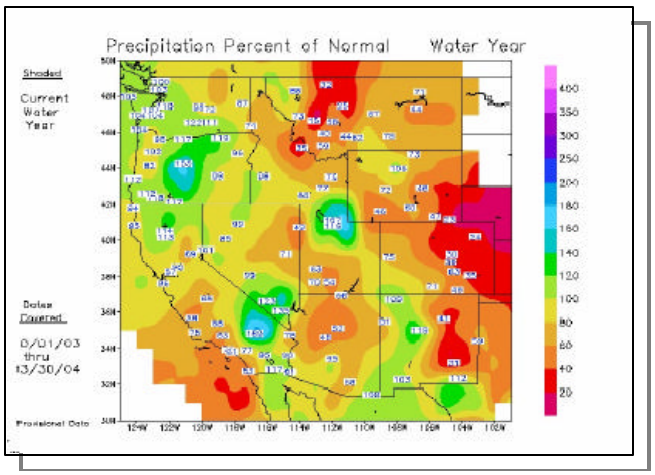
The dominating weather feature across the West Coast has been a split-flow pattern in the upper atmosphere for much of this past winter. This overall upper-air pattern broke down only occasionally with full latitude troughs moving through California, which is when the southern half of the state received its heaviest rainfall. Typically, split-flow patterns yield mild temperatures across southern and central California with varying amounts of precipitation. A split-flow usually keeps the stronger, more dynamic storms north of the area; however, sometimes the southern portion of the jet stream can become fairly active and produce heavy amounts of rainfall across the southern portion of the state.

This was not the case during the past winter season. Most of the precipitation for the water year occurred in late December and then again in February. Temperatures were slightly above normal across most of central California and near normal over southern California during the fall and winter months.

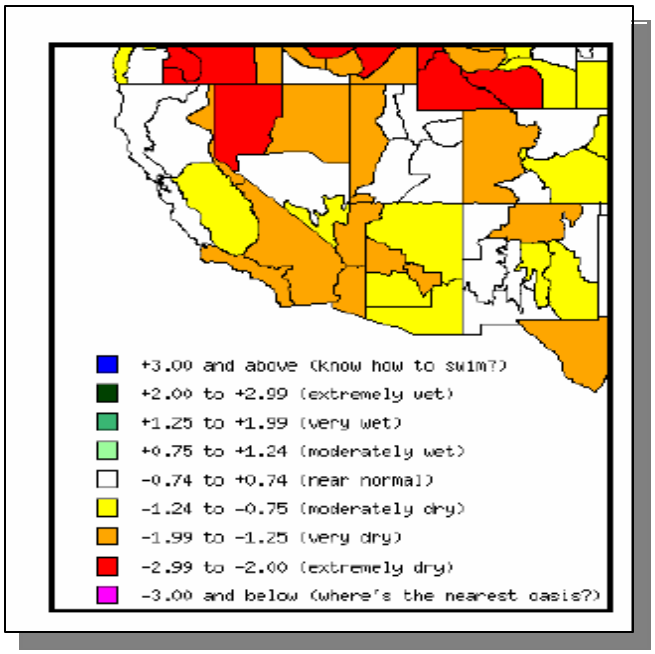
Weather and Climate (continued)

California Southern Region

March however was very warm over most of the region with nine days above 90 degrees. Riverside in fact, during the month of March, broke 15 records consisting of daily high maximums and daily low maximums. Consequently, snow pack in the Sierra Nevada is somewhat less than it should be for this time of the year.



Typically in July and August, the most significant factor contributing to wildland fire ignitions will be the amount of thunderstorm activity present. Consensus forecasts from climatologists suggest that there is a large degree of uncertainty as to the placement, amount, and duration of monsoonal moisture over the southwest United States.



During a normal summer, southern and central California usually experiences at least several episodes (3 to 5 days) of thunderstorm activity. We would expect this summer to average around near normal in terms of the amount of thunderstorm activity. Temperatures over the region are expected to average near normal over the coastal areas with continued above normal conditions across the inland areas, especially near the Arizona and Nevada borders. Very little rainfall usually occurs during this period and we don't anticipate any significant increase in rainfall activity other than what we would normally experience

Fuels

California Northern Region

The 3 ½ week unseasonably warm period in early March decreased fine and large dead fuel moistures especially the 1, 10, and 100 hour time-lag categories (0-3" diameter). The increased availability of fuels has allowed earlier than normal prescribed burning activity.

Live fuel moistures in brush species have increased during the warming trend in early March except at higher elevations where the brush is still dormant. 1000-hour fuel moistures for March range from 20 to 59% and average 35% (see Exhibit 1 and 2).

The availability of live and dead fuels is directly related to the moisture content of the material. Live fuel moistures at 100% or below may exhibit extreme fire behavior including crowning, spotting and potential development of a plume-dominated fire. These conditions are explosive and are extremely dangerous conditions for firefighters.

Dead fuels are expected to become available earlier in the season and reach critical levels earlier than normal.

Dead fuel moistures less than 12% indicate the material is available for rapid combustion. Smaller dead material dries faster than larger pieces. As 1000-Hour Fuel Moisture (3 to 6" diameter) drops below the critical 12%level, this indicates that the entire range of fuels is ready to burn. Graphs showing the condition of 1000-Hour Fuels show decreasing dead fuel moisture.

1000-Hour Fuel Moisture Charts

1000-Hour dead fuel moisture levels are computed from a 7-day average boundary condition composed of day length, hours of rain, and daily temperature/humidity ranges.

Exhibit 1 – Meyers, El Dorado County CA

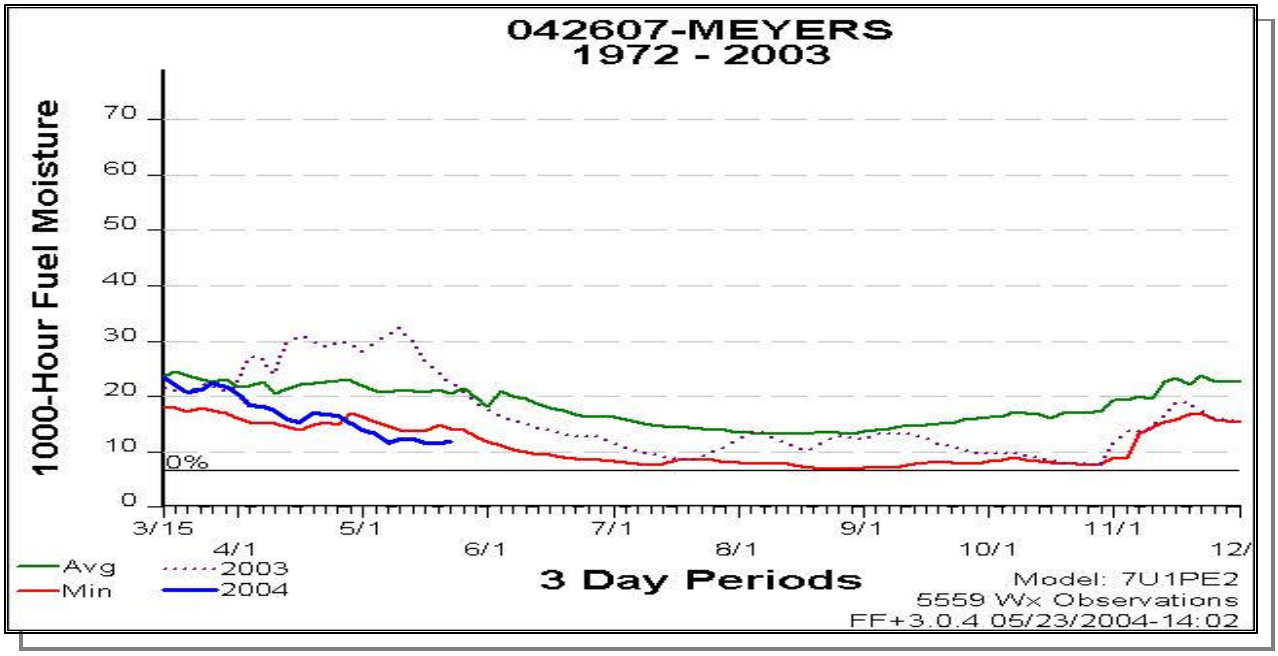
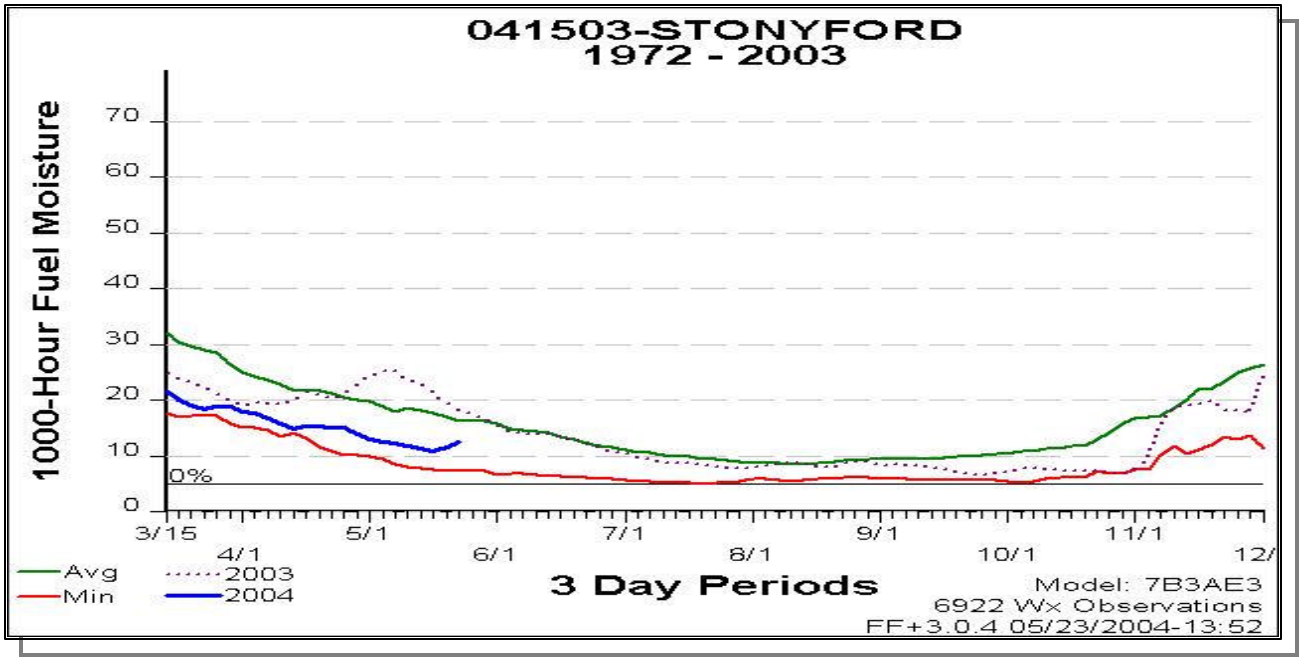


Exhibit 2 – Mendocino National Forest, Colusa County CA



Fuels (continued)

California Southern Region

The 1000-hour fuel moistures being recorded at various remote automated weather stations (RAWS) throughout Southern California are approaching record low levels. Thus far in 2004 the moisture content of both live and dead vegetative fuels has been exposed to a drier than normal spring with 1000 hour fuels reflecting near-record lows for the months of April and May (see Exhibits 3 and 4). These levels are indicative of the long-term drought throughout the area.

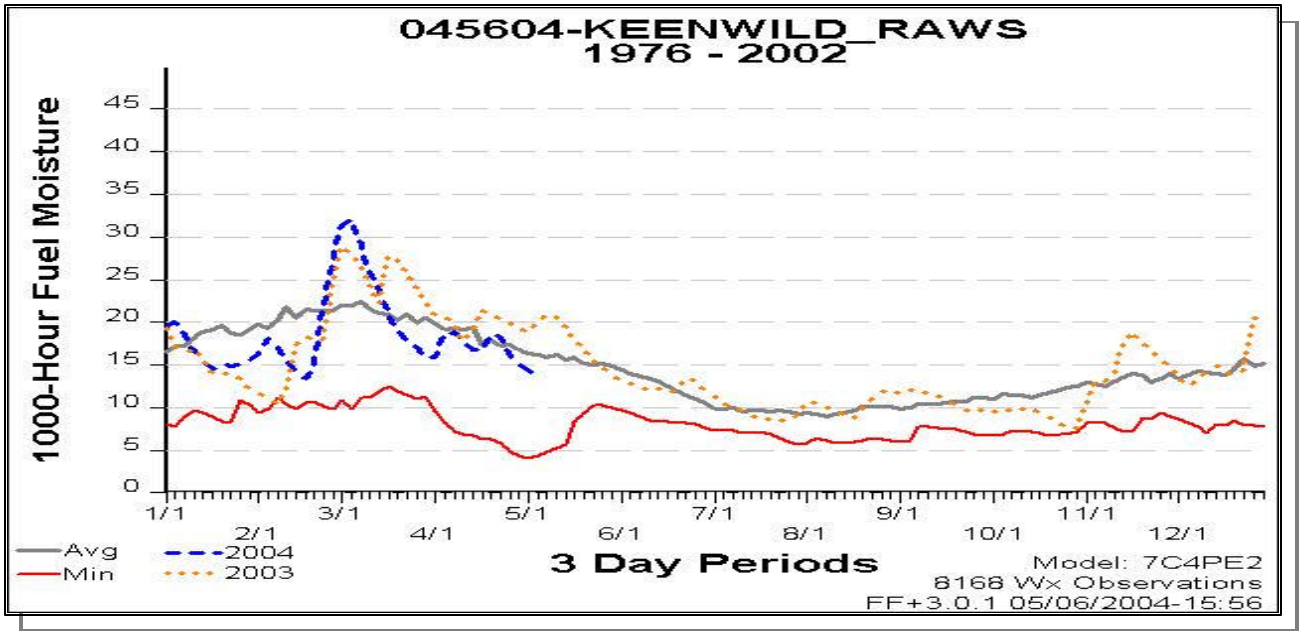
These long-term drought conditions have caused widespread stress in both timber and brush species throughout the Southern Sierras and most areas to the south. This stress is manifested in low foliar moisture resulting in more available fuel for combustion and fire spread. Drought stress on the vegetation has resulted in varying and extensive brush and timber mortality throughout the Angeles, Cleveland, San Bernardino, and Sequoia National Forests and surrounding state and local responsibility areas.

Much of the forested area in Southern California has been significantly altered from its historic fire return interval and absence of other management options, leading to over-densification and heavy fuel loading with the potential for stand-replacing fires and ecotype conversion. The combination of drought and resulting heavy fuel loads have contributed significantly to large fire occurrence in the past four years.

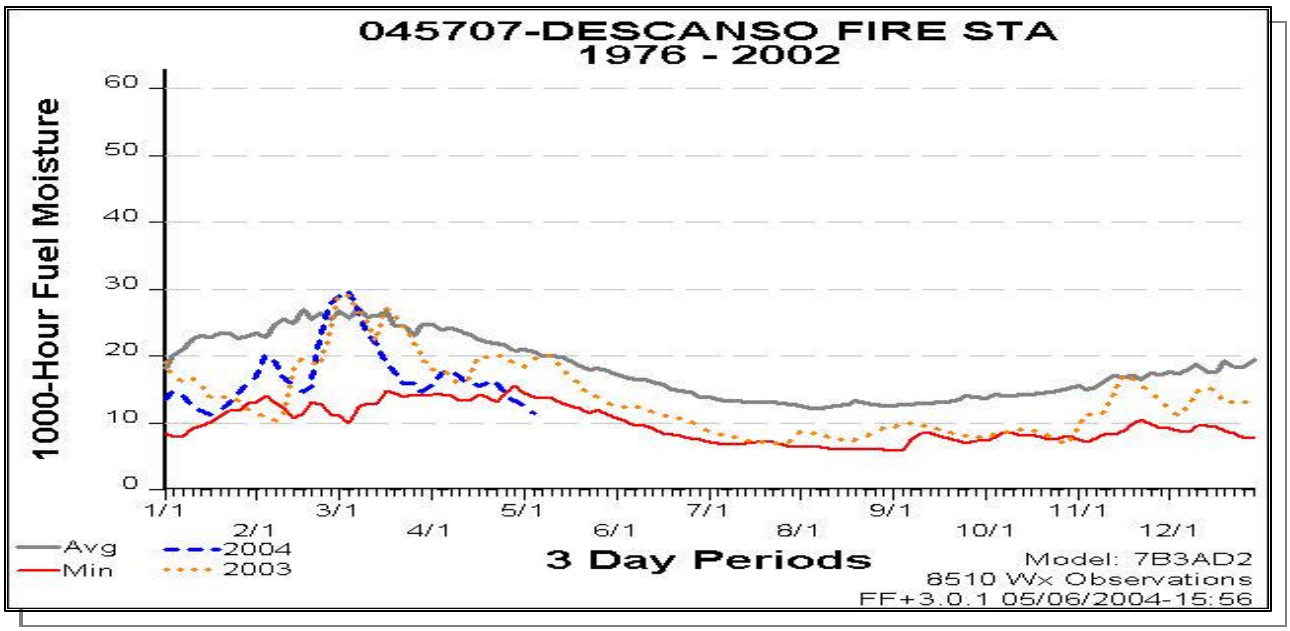
Cumulative drought produced extreme dryness in dense vegetation resulting in extreme fire growth. Moderate winds exacerbated the fire behavior leading to unprecedented rates of spread. Fuel conditions have not changed significantly for the upcoming fire season. Winter precipitation produced a moderate grass crop. Above normal temperatures in March have led to an early curing of fine fuels, especially in the lower elevations.

1000-Hour Fuel Moisture Charts

<u>Exhibit 3</u> – Keenwild - San Bernardino National Forest, Riverside County CA



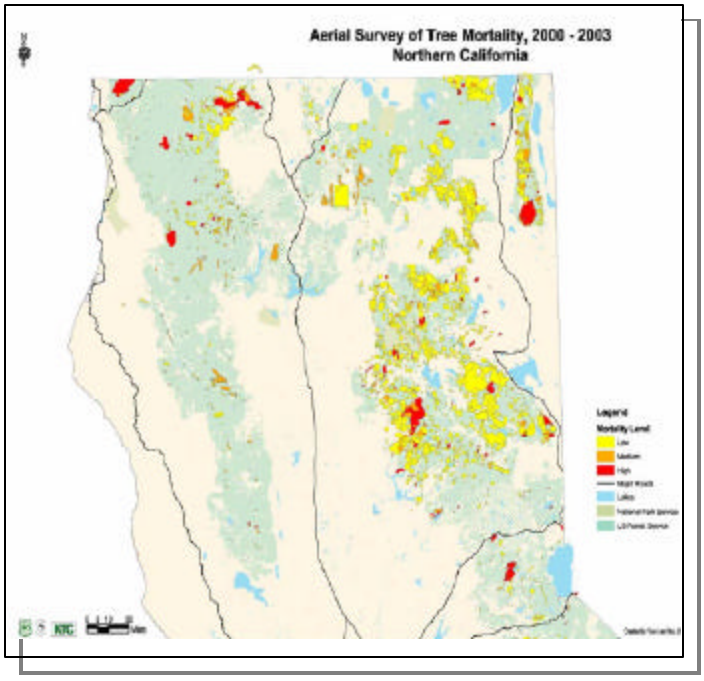
<u>Exhibit 4</u> - Descanso - Cleveland National Forest, San Diego County CA



Fuels Assessment

California Northern Region

As live and dead fuels continue to dry, they become more susceptible to combustion. Tree mortality caused by insects, disease, early drying and the downing of trees and limbs due to excessive winds and snowfall has impacted significant areas of conifers, hardwoods and brush. Fuel conditions of particular concern include standing and down trees in fir species at upper elevations and an abundance of dead hardwoods affected by Sudden Oak Death disease.



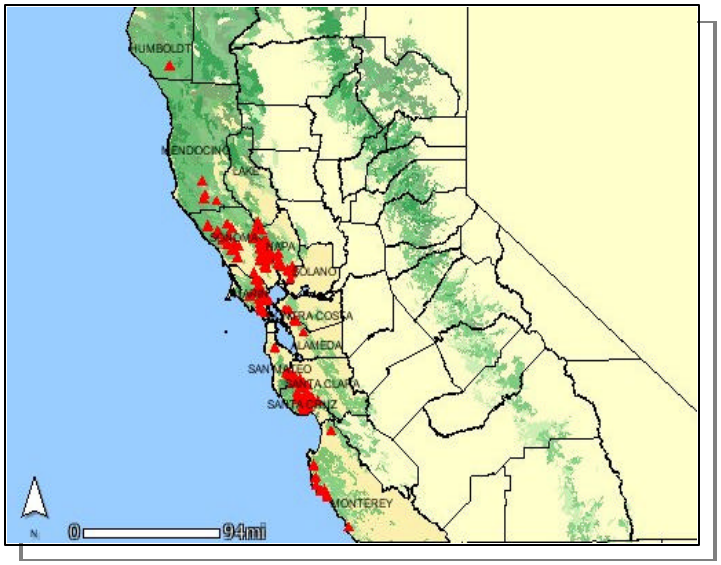
Also, significant areas of hanging slash and dead ladder fuels resulted from a heavy snowfall north and west of Redding. These areas will see increased potential for higher intensity fires, torching, crowning and spotting.

The 3½-week warming trend in early March has resulted in green up of live fuels 2-4 weeks ahead of normal. Fuels availability has increased at lower elevations (below 2000 feet) due to earlier green-up and heading out of annual and perennial grasses.

The fine fuels have begun to cure on south aspects and valley bottoms. The 30-40% reduction of snow-pack from the end of February to the end of March has allowed earlier curing of live fuels and drying of dead fuels.

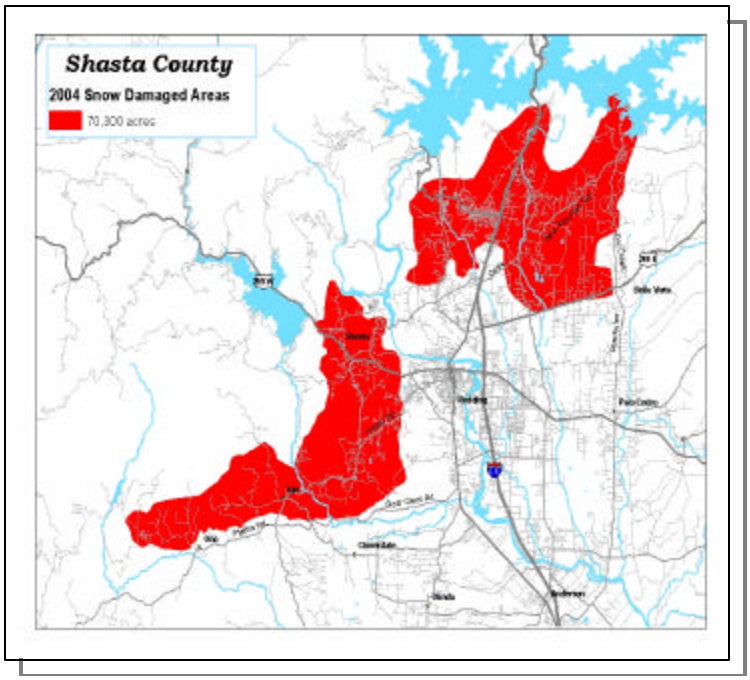
Indications from the current climate and weather outlook are that fire season could start earlier, and therefore be of longer duration.

Special fuel considerations include tree mortality and the snow damage area in central Shasta County. This snow damage area is of particular concern because of the wildland urban inter-mix. Increased fuel loadings are expected to dry rapidly as summer approaches.



Confirmed Sudden Oak Death Sites

Fuels Assessment (continued)



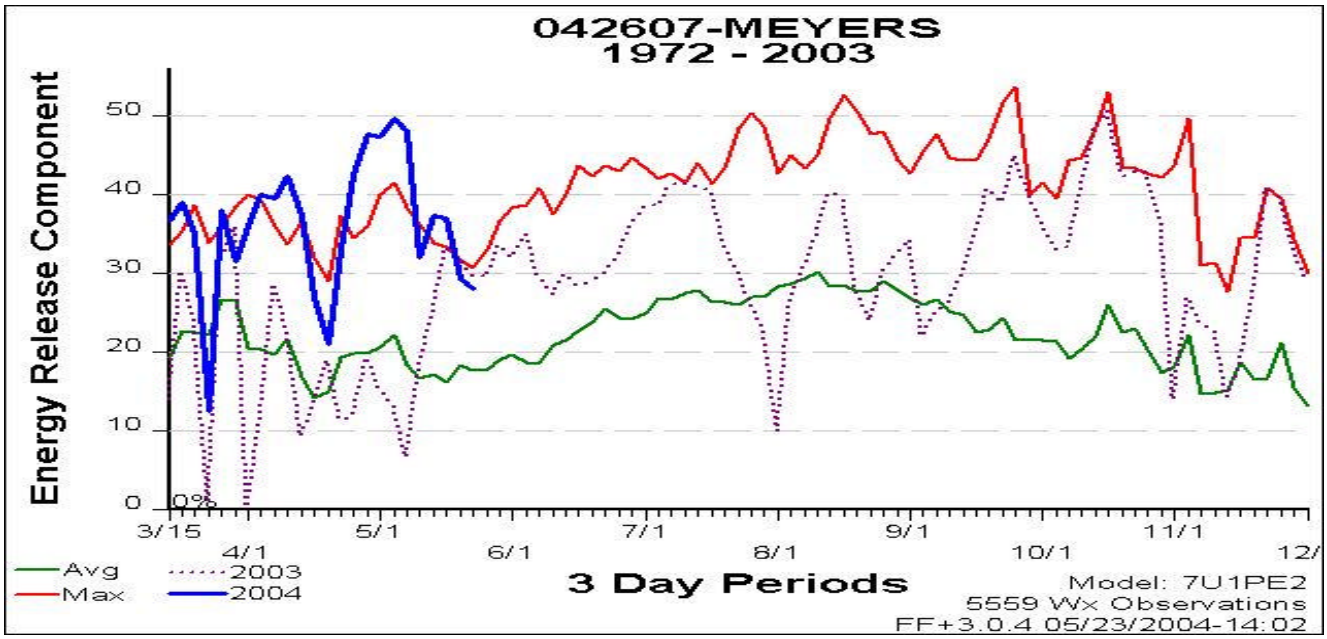
California Northern Region

The tree mortality from insects, disease, and the downing of trees due to excessive winds has affected significant areas of hardwoods and conifers. These areas will see an increased potential for higher intensity fires, torching, crowning, and spotting.

Energy Release Component Charts

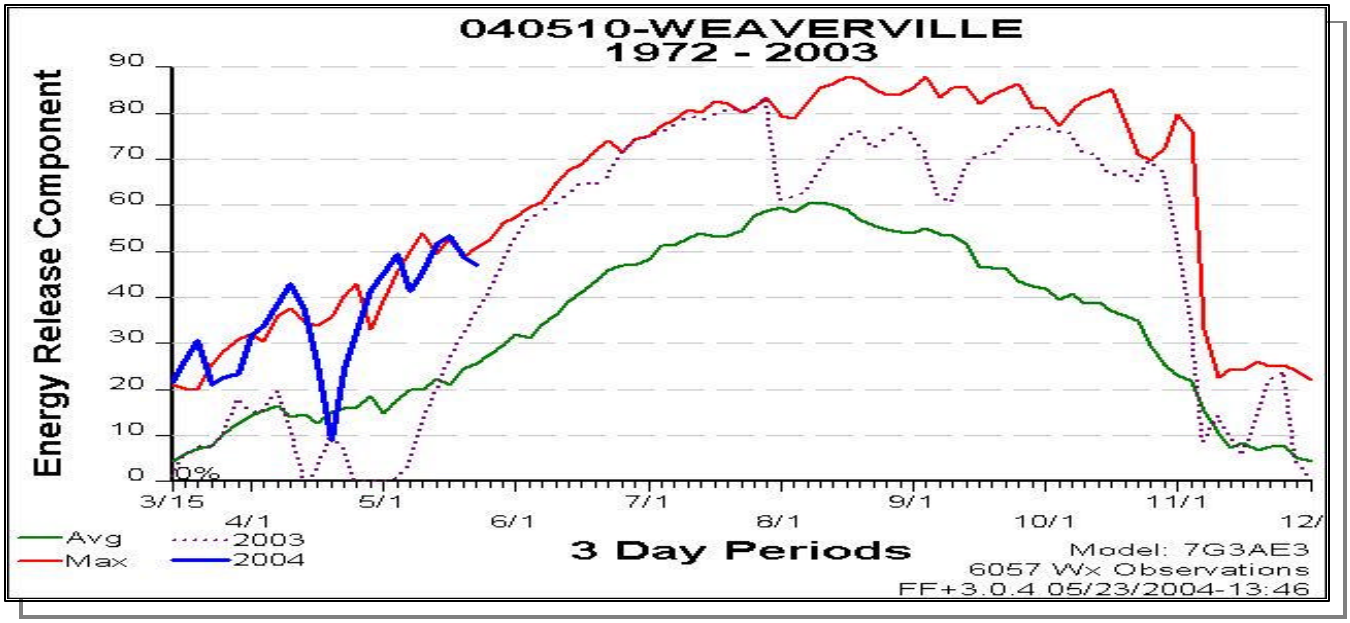
The Energy Release Component is an index related to how hot a fire could burn during the peak burning conditions of a 24-hour period. It is indicative of the effects of intermediate to long-term drying of both live and dead fuels absent the influence of wind. It is expressed as total available energy (BTUs) per square foot within the flaming front of a head fire. High and extreme indices correlate to difficulty of controlling a fire.

Exhibit 5 – **Meyers, El Dorado County CA**



Energy Release Component Charts

Exhibit 6 – Weaverville - Shasta National Forest, Trinity County CA



Fuels Assessment (continued)

California Southern Region

Approximately 350,000 acres in and around the San Bernardino NF has continued to experience significant mortality in timber and brush with the timber fuel loadings in the area around Lake Arrowhead estimated to be in the 300-500 stems per acre range.

On the San Bernardino National Forest alone it is estimated that nearly 12 million trees are either dead or dying. Of these, an estimated 4 million trees have diameters of 6 inches or larger

Initial attack resources will be instrumental in keeping fires out of crowns. Firefighters need to recognize and be aware of the transition from a surface fire to a crown fire.

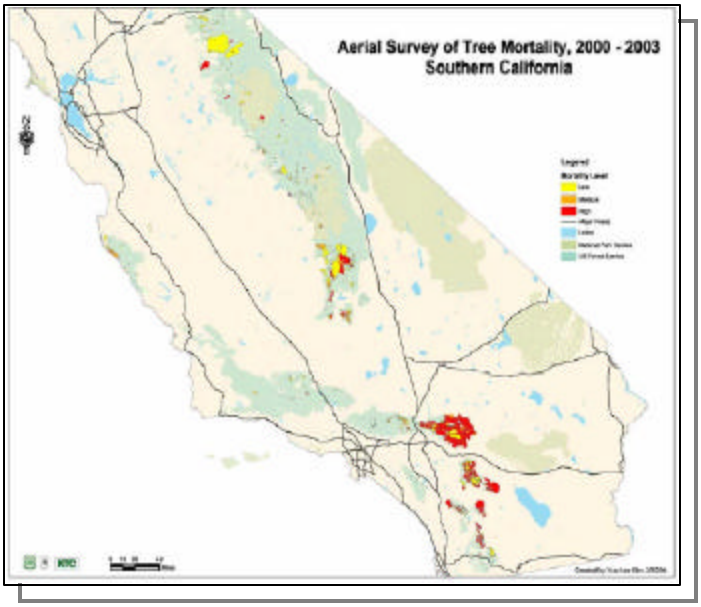
Firefighters need to recognize and be aware of the transition from a surface fire to a crown fire. Passive crowning is likely in many areas.

Wind and slope will dictate whether an active crown fire occurs. If 20-foot wind speeds are below 7 mph on flat ground or gentle slopes then moderate spotting distances of up to ½ mile are possible. The same could be said with little or no wind on slopes less than 50%.

If a surface fire establishes and slopes greater than 50% and/or wind speeds greater than 7 miles per hour occurs an active crown fire is probable, which can move into an independent crown fire.

Fuels Assessment (continued)

California Southern Region



There are three primary factors that make the fire potential for this season different than normal:

- An early onset of low elevation fires due to cured fine fuels
- Long-term drought stress on the vegetation
- Widespread brush and timber mortality.

It was due to these conditions that we in the Southern Region experienced an increase in the amount of initial attack activity at the lower elevations in May.

The most critical areas are those areas experiencing brush die-back and tree mortality in urban interface areas in and around the three southern Forests (ANF, BDF, and CNF). Timber mortality continues to spread, notably in high-density urban interface areas. Existing fuel conditions in these areas indicate abnormally high resistance to control and the potential for a high rate of spread.

Energy Release Components (ERCs) recorded for the months of April and early May reflect August near-record highs (see Exhibits 7 and 8).

Fuels Assessment (continued)

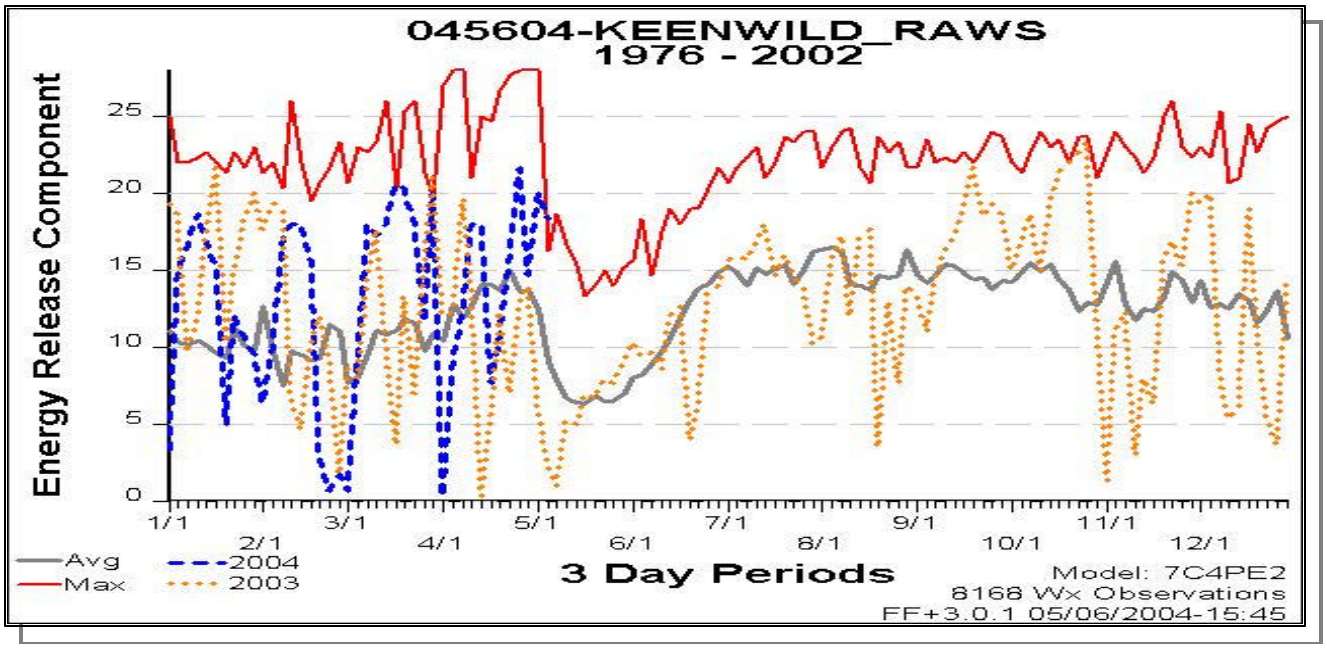
California Southern Region

These conditions are likely to persist or increase throughout the summer months. Many of these mountain and foothill communities have significant populations and limited means of egress, and firefighting efforts in these communities will be difficult and dangerous as demonstrated in the destructive fires in October and November of 2003.

Those fires burned over 720,000 acres in ten days, with the majority of acres burning in brush. However, most areas affected by vegetation stress and timber and brush mortality did not burn. These heavily populated areas also bring increased potential for human-caused wildfires.

Energy Release Component Charts

Exhibit 7 - Keenwild - San Bernardino National Forest, Riverside County CA



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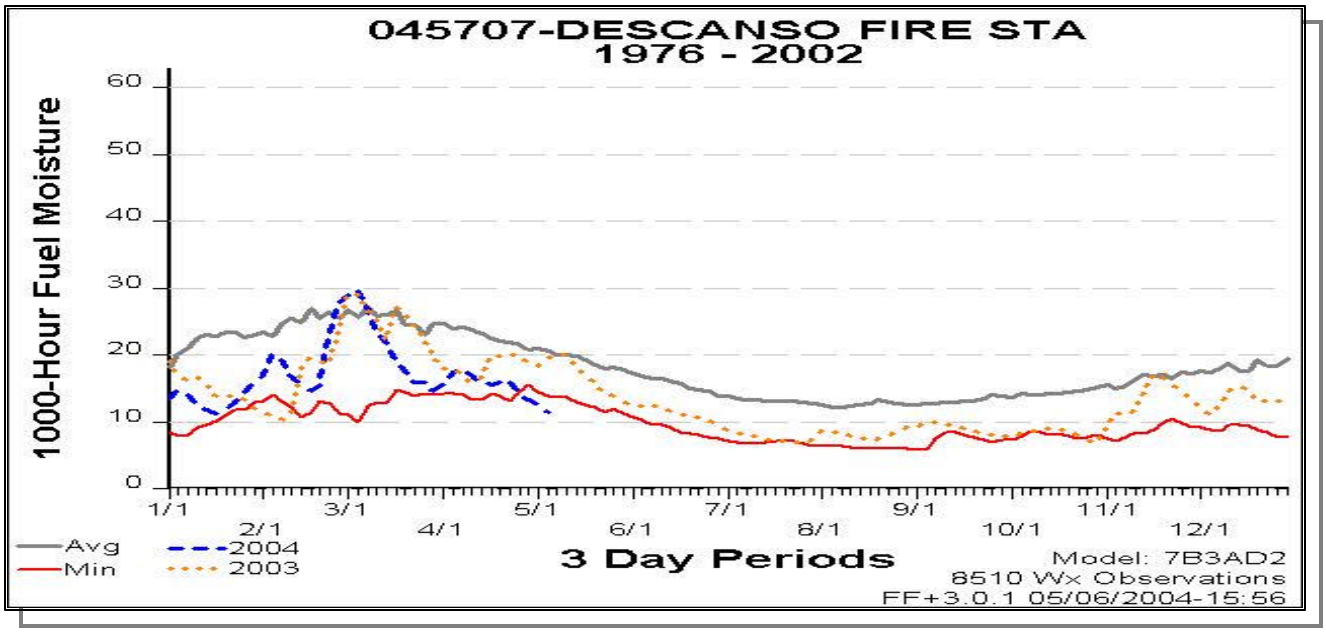
Energy Release Component Charts

Exhibit 8 - Descanso - Cleveland National Forest, San Diego County CA



Fire Behavior

The combination of heavy vegetation mortality, heavy fuel loading, low live fuel moistures, low 1,000 hour fuel moistures and the fire weather outlook of above normal temperatures all indicate a high potential for extreme fire behavior throughout both the Northern and Southern parts of the State.

Trigger Points for Extreme Fire Behavior

Extreme fire behavior trigger points are:

- Relative humidity below 20%
- Eye level winds at 10 mph or higher
- 1,000 hour fuel moistures below 8%
- Burning index of 50 or greater in 1000-hour fuels

Fire Behavior Assessment

There is a landscape-level mortality of 5-100% in the timber and chaparral over approximately 350,000 acres. Standing and down dead fuel loadings could range up to several hundred tons per acre. Die off of grasses and critical fuel moistures in chaparral should be reached in mid to late July. Fuel moisture in the 1,000 hour fuels is below the 20-year average and dropping. The mountain top is heavily urbanized and many of the structures have wood siding, decks, flammable roofs and flammable vegetation close by including standing dead trees. Due to the spacing of homes, slopes, and narrow road systems burning is likely to be more characteristic of urban conflagration rather than a typical wildland/interface fire.

Plume-Dominated Fire

The potential for a plume-dominated fire is extremely high; this is due to the heavy dead fuel loading of the landscape and the potential for crown fire. Plume-dominated fires can include crowning or can be caused by crowning when wind or slopes are no longer pushing the fire. Common characteristics of a plume-dominated fire are:

- Large fires or rapid spread
- Fire spread is a function of the fire itself, not the wind
- Upper level winds at 10,000-feet below 20 mph
- Convection column is well developed, sometimes reaching 20,000+ feet
- Strong updrafts during rapid growth and strong downdrafts after air cools in the upper atmosphere causing air to descend rapidly (column collapse) causing strong downdrafts

- Spotting is not long distance but can be profuse and in all directions
- Whirlwinds are typical around the perimeter

Urbanized Forest Communities

A rapidly spreading wildfire coupled with a lack of defensible space may result in many structures burning simultaneously. Structure protection may not be possible. Sizing up each situation and triaging structures will be extremely important before committing to any structure protection.

Fire behavior will be influenced not only by forest fuels but also by the extreme intensity of multiple burning structures. Expect extreme fire behavior conditions with the potential of homes being a carrier of fire. Hazardous materials, electric and gas lines, and propane tanks will also be a factor.

Safety

The 10 Standard Fire Fighting Orders must be followed as well as the Eighteen Watch-out Situations.

Make it a priority to review the **Wildland Urban Watch-outs**, the **LCES Checklist**, the **Structure Go-No Go/Protection Reference,** the **Common Denominators of Fire Behavior on Tragedy Fires** and utilize **the Pre-Incident Assignment Checklist** (see attachments).

- Take the time to ensure, and promote a safe working environment, review the following safety points and remember; "Sheltering-in-Place" procedures (both civilian and fire personnel)

Safety (continued)

- Remain mobile, no supply lines unless crew safety is compromised. When employing protection tactics always back-in apparatus and always employ a backup person.

- Structure Protection requires the use of appropriate structure personal protective equipment (PPE).

- Observe vertical hazards (power lines, falling trees, etc.)

- Strike Team Leaders should scout high danger areas prior to deploying engines/equipment

- Exercise extreme caution when deployed to areas of limited ingress/egress, high concentration of bug kill, limited or poor water resources, etc.

- Wood constructed structures with shake roofs may burn intensely and extremely quick. Flying brands from burning roofs may continue downwind igniting additional structures.

- Situations involving crowning, large flame heights and erratic fire behavior can extend in an unpredictable manner, beyond the control of any number of fire suppression personnel.

- Do not overextend your personnel, or resources. Anticipate resource needs, and order early.

- Winds of 25+ mph increase the chance of spotting over the heads of firefighters, and trapping them between both fire areas. Winds also cause greater preheating of fuels in the path of a fire front.

- When necessary and if time permits attempt to create a defensible space around structures; remember that structures on slopes will require greater clearance.

Safety (continued)

- Snags are one the overall top killers of Wildland Firefighters in California. Snags by themselves are quite hazardous; when on fire they become extremely dangerous. Do not attempt to fall a snag unless you are qualified to do so. When performing structure protection in and around snags you should post additional lookouts. Place your engine in a position that it will not be blocked or hit by falling snags. Prior to engine placement size up all snags and mark accordingly, either with the standard green and white "Killer Tree" flagging or by yellow and black hazard tape.

- Evacuation responsibilities can task firefighters from their fire suppression activities, and may distract attention from fire behavior at a time when that focus may be most critical. If possible, utilize law enforcement resources for evacuation needs, especially when establishing perimeter controls.

- When faced with canyon slopes or "chimneys" with slopes of 30% or more and continuous, flashy fuels the rate of spread of any fire can quickly extend beyond initial containment.

- Reduced or poor access with narrow, one-way roads could trap apparatus and personnel before they can safely egress the area. Ensure that you always provide for exits. Do not block ingress/egress to others.

- Always maintain a reserve water supply sufficient to protect your apparatus and personnel. Anticipate the need for additional water resources and evaluate the availability of such.

- Deploy no more than 300' of hose

- Use a minimum of 1 1/2 " hose

Safety (continued)

- Heavy fire apparatus may exceed the normal capacity of rural bridges. Apparatus Operators need to remain alert to changing road and vehicle conditions, and pay close attention to posted load limits.

- When employing safety zones they should be large enough so that the distance between the firefighters and flames is at least four times the maximum flame height in all directions per firefighter. This is for radiant heat only. There are no studies for convective heat generated from slope, wind gusts, fire whirls, and turbulence. Safety zones in these areas would have to be much larger.

Attachments:

10 Standard Fire Orders
18 Watch-out Situations
Wildland Urban Watch-outs
LCES Checklist
Structure Go-No Go / Protection Reference
Common Denominators of Fire Behavior on Tragedy Fires
Pre-Incident Assignment Checklist

TEN STANDARD FIRE ORDERS

FIRE BEHAVIOR

1. Keep informed on fire weather conditions and forecasts.
2. Know what your fire is doing at all times.
3. Base all actions on current and expected behavior of the fire.

FIRELINE SAFETY

4. Identify escape routes and safety zones, and make them known.
5. Post a lookout when there is possible danger.
6. Be alert. Keep calm. Think clearly. Act decisively.

ORGANIZATIONAL CONTROL

7. Maintain prompt communication with your forces, your supervisor and adjoining forces.
8. Give clear instructions and insure they are understood.
9. Maintain control of your forces at all times.

IF YOU CONSIDER 1-9, THEN

10. Fight fire aggressively, having provided for safety first.

CDF - June 2003

18 Watch-outs Situations

1. Fire not scouted and sized up.
2. In country not seen in daylight.
3. Safety zones and escape routes not identified.
4. Unfamiliar with weather and local factors influencing fire behavior.
5. Uninformed on strategy, tactics, and hazards.
6. Instructions and assignments not clear.
7. No communication link with crewmembers/supervisors.
8. Constructing line without safe anchor point.
9. Building fireline downhill with fire below.
10. Attempting frontal assault on fire.
11. Cannot see main fire, not in contact with anyone who can.
12. Unburned fuel between you and the fire.
13. On a hillside where rolling material can ignite fuel below.

18 Watch-outs Situations (continued)

14. Weather is getting hotter and drier.

15. Wind increases and/or changes direction.

16. Getting frequent spot fires across line.

17. Terrain and fuels make escape to safety zones difficult.

18. Taking a nap near the fire line.

Wildland-Urban Watch-outs

- Poor access and narrow one-way roads.
- Bridge load limits.
- Wooden construction and wood shake roofs.
- Inadequate water supply.
- Natural fuels 30’ or closer to structures.
- Structures in chimneys, box canyons, narrow canyons, or on steep slopes (30% or greater).
- Extreme fire behavior.
- Strong winds.
- Evacuation of public (panic).

Source: USFS Incident Response Pocket Guide
January 2002

LCES Checklist

LCES must be established and known to **ALL** firefighters **BEFORE** needed.

Lookout(s)

Experienced/Competent/Trusted
Enough lookouts at good vantage points
Knowledge of crew locations
Knowledge of escape and safety locations
Knowledge of disengagement trigger points
Map/Weather Kit/Watch/IAP

Communication(s)

Radio frequencies confirmed
Backup procedures and check-in time established
Provide updates on any situation change
Sound alarm early, not late

Escape Route(s)

More than one escape route
Avoid uphill escape routes
Scouted: Loose soils/Rocks/Vegetation
Timed: Slowest person/Fatigue and Temperature factors
Marked: Flagged for day or night (NFES 0566)
Evaluate: Escape time vs. Rate of spread
Vehicles parked for escape

Safety Zone(s)

Survivable without a fire shelter
Back in clean burn
Natural Features: Rock Areas/Water/Meadows
Constructed Sites: Clearcuts/Roads/Helispots
Scouted for size and hazards
Upslope?
Downwind? → More heat impact ----- Larger safety zone
Heavy Fuels?

Escape time and safety zone size requirements will change as fire behavior changes.

Source: USFS Incident Response Pocket Guide
January 2002

Common Denominators of Fire Behavior on Tragedy Fires

These are four major common denominators of fire behavior on fatal and near-fatal fires. Such fires often occur:

- On relatively small fires or deceptively quiet areas of large fires.
- In relatively light fuels, such as grass, herbs and light brush.
- When there is an unexpected shift in the wind direction or in wind speed.
- When fire responds to topographic conditions and runs uphill.

Note: Alignment of topography and wind during the burning period should always be considered a trigger point to re-evaluate strategy and tactics.

Source: USFS Incident Response Pocket Guide
January 2002

Structure Go/No-Go Protection Reference

Factors that may make a structure too dangerous to protect: If you answer, "yes" to any of the below, don't attempt to protect that structure, move on to the next.

- Fire is making a sustained run and there is little or no clearance.
- Water supply will not last as long as the threat.
- Fire's intensity dictates leaving the area immediately.
- The roof is more than one-quarter involved.
- There is fire inside the structure or windows are broken.

If the conditions listed above allow for a structure protection effort to be made then:

- Check roads before the fire arrives. Know turnouts, and bridge limits.
- Check each home for an adequate defendable space.
- Stay mobile; keep vehicle engine running and red lights on.
- Back in equipment for a quick escape.
- Brief resources on strategies, tactics, hazards, and LCES.
- Coil a short 1½ " charged line with a fog nozzle on your engine for safety and
- quick response.
- Use short hose-lays.
- Keep at least 10% gallons of water in your tank.
- Determine if residents are home.
- Advise residents of escape routes, safety zones, evacuation plans and centers.
- Ask residents to evacuate threatened livestock or pets.
- Leave home lights on inside and out, day and night.
- Place owners ladder at a corner of the structure least threatened by the fire.
- Coil and charge garden hoses.
- Turn on sprinklers.
- Identify hazards. (HazMat, gas lines, power lines, etc.)
- If a home becomes involved, leave it and move to one you can save.

Firefighter safety and survival are the number one priority.

Source: BLM Red Book
January 2003

Pre-Incident Assignment Checklist

California Deployment

- ☐ **Roster** (identify resource designators, and names for all personnel assigned to this deployment)
- ☐ **Order and Request Number(s)** (identify the specific Order and Request number(s) for all resources and/or Overhead assigned from your agency)
- ☐ **Location of Incident(s), Legal Description(s), and Map Reference(s)** (include travel route(s), and itinerary)
- ☐ **Topography** (include surrounding area(s)) (identify, and discuss the type of terrain, including aspect, and elevation for this incident(s))
- ☐ **Fuel Type(s)** (identify, and discuss fuel model(s) involved, please see attachment)
- ☐ **Weather** (review current and predicted weather forecasts for this deployment)
- ☐ **Fire Behavior** (If known, review any current, and predicted fire behavior that may be encountered by fire suppression personnel)
- ☐ **Communications** (review all mobile, and H.T. frequencies used for travel, and/or incident activity, discuss potential for 800 MHz, UHF, and VHF conflicts)
- ☐ **Ordering Point, and/or Communications Center Contact** (identify communication contacts for a Single/Unified Ordering Point, Emergency Communications Center(s), and/or incident location(s), include frequencies, and available landline and/or cell phone number(s))
- ☐ **Logistical Support** (identify any fire stations, mobilization centers, motels, restaurants, etc. that may be used for logistical support either during travel, or incident)
- ☐ **PPE Check** (inspect all personal protective equipment for completeness, and serviceability)
- ☐ **Equipment Check** (inspect vehicles, complement, supplies, etc. for completeness, and serviceability, discuss potential for foodstuff contamination, and spoilage)
- ☐ **Safety Message(s)** (**L**ookouts, **C**ommunications, **E**scape **R**outes, **S**afety, 18 Situations, 10 Standard F.I.R.E.O.R.D.E.R.S., etc.)
- ☐ **Documents** (inspect, and ensure adequate supplies, and correct version of all travel, financial, personnel, and incident documents)
- ☐ **Agency Documentation** (ensure the documentation of <u>all</u> safety messages; tailgate sessions, etc. in accordance with California Code of Regulations, Title 8 requirements)
- ☐ _____
- ☐ _____

Notes:

- ☐ _____
- ☐ _____